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NATURAL HERITAGE NEWS

The Newsletter of the Natural Heritage & Endangered Species Program

Inventorying and Protecting the Biological Diversity of the Commonwealth Since 1978

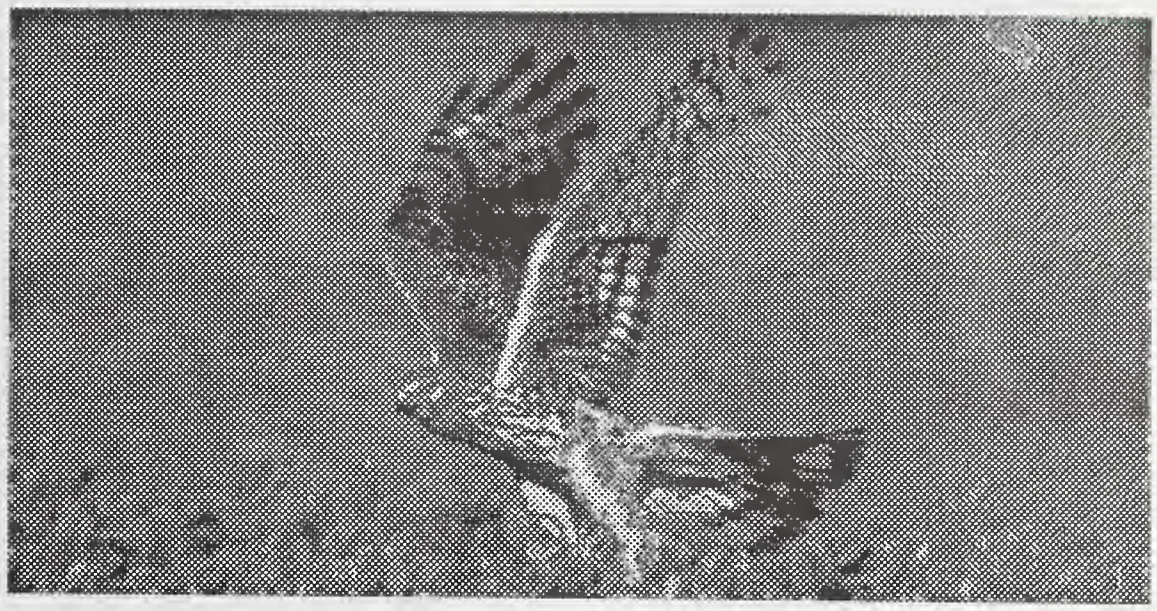
VOLUME 6, NUMBER 1 EARLY SUMMER 1997

Innovative Agreement to Restore Harrier Habitat on Nantucket Underway

Restoration of habitat for a state-threatened raptor, the **Northern Harrier**, is at the center of an innovative conservation agreement negotiated last year by the Natural Heritage & Endangered Species Program, a Nantucket golf course developer, and private conservation groups. As a condition of a conservation permit issued by the Division of Fisheries & Wildlife, the newly-formed Nantucket Golf Club will fund the restoration and management of 1,110 acres of grassland and heathland on Nantucket to benefit Northern Harriers. This restoration and management is mitigation for the club's new 18-hole golf course, which will degrade over 100 acres of grassland used by breeding harriers.

The Division is authorized under the Massachusetts Endangered Species Act (MESA) to issue conservation permits for projects that will have adverse effects on state-listed rare species of plants or animals, provided such projects are designed in ways that provide a long-term net benefit to those species. Such benefits can be provided through land preservation, habitat management, monitoring, or research. The conservation permit issued to the Nantucket Golf Club in May 1996 authorizes disruption of the breeding and feeding behavior of the Northern Harrier, as well as the

(continued on Page 2)



--Photo by Bill Byrne-

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Habitat Restoration Initiative

A major new initiative in habitat restoration of high priority natural community types in Massachusetts has been made possible by funding authorized in the 1996 Open Space bond bill and made available last winter by the Secretary of the Executive Office of Environmental Affairs. This restoration effort, while limited to public conservation lands, has enormous potential to maintain and enhance unusual natural community types such as Pitch Pine/Scrub Oak barrens and limestone wetlands. With $500,000 provided through the Department of Fisheries, Wildlife and Environmental Law Enforcement, several major restoration projects are now being established. We will have a full report on these in our next newsletter.

(continued from page 1)

transplanting of two species of rare plants, St. Andrew's Cross (Endangered) and Bushy Rockrose (Species of Special Concern), that occur at the site. Under terms of the agreement negotiated as part of the conservation permit, the Nantucket Golf Club has created a not-for-profit conservation organization called Partnership for Harrier Habitat Preservation (PHHP). Other members of PHHP include the Nantucket Conservation Foundation, Massachusetts Audubon Society, and The Nature Conservancy.

Through PHHP, the Nantucket Golf Club will provide funding to restore and manage grasslands and heathlands for a period of 50 years on properties owned by the Nantucket Conservation Foundation and the Massachusetts Audubon Society and to monitor responses of harriers and their prey to habitat management. Habitat restoration and management will be accomplished through a program of brush-cutting and controlled burning beginning this year.

The Northern Harrier, or Marsh Hawk, is a slim, long-legged hawk with an owl-like face and distinctive white rump patch. It feeds primarily on small mammals and birds, alternately flying and hovering low over the ground. On Nantucket, harriers nest from April to July in grasslands, heathlands, and wetlands. During spring, male harriers perform a spectacular aerial courtship display or "skydance" consisting of dives, swoops, and tumbles. Once a common sight in Massachusetts, only about 50 breeding pairs of harriers remain in the state, where they are restricted primarily to the coastal islands. The most significant factor in the hawk's decline has been the loss of open grassland and heathland habitats to human development and vegetational succession.

Negotiations between the Natural Heritage Program and the developer also resulted in a golf course design intended to minimize adverse impacts to rare plants and grassland habitat. Areas between fairways will be restored to native vegetation, and on-site restoration of St. Andrew's Cross and Bushy Rockrose is being facilitated through development of a native plant nursery. These rare plants will also benefit indirectly through the restoration and management of early successional grasslands and heathlands favored by Northern Harriers.

This is one of the first conservation permits issued by the Division under MESA. The management agreement on which the permit is based was negotiated by Hanni Dinkeloo and Dr. Scott Melvin, environmental reviewer and zoologist, respectively, with the Division's Natural Heritage and Endangered Species Program. The Nantucket partnership is an excellent model for future innovative agreements that can be developed through the Division's conservation permitting process. Conservation permits offer the flexibility to negotiate creative solutions to conflicts between endangered species and development projects. We expect them to be important and effective conservation tools that can be used to benefit a variety of rare species and their habitats throughout Massachusetts.

- Scott Melvin-

New Massachusetts Endangered Species Act Conservation Permit

As of July 1, 1995, the Massachusetts Endangered Species Act was amended to include permits for conservation and management purposes in addition to the scientific and educational permits that were previously allowed. Under regulations implementing this new permit, an applicant for the conservation permit must propose a conservation plan that offers a long term net benefit to the local population of the state-listed rare species that will be impacted. One such 'net benefit' may be habitat restoration (see article on Innovative Agreement to Restore Harrier Habitat on Nantucket). Before an applicant may even propose a conservation plan, he or she must minimize impacts to the rare species on site to the greatest extent practicable and establish that an insignificant portion of the local population is impacted or demonstrate that no viable alternative exists. This new permit allows some flexibility for someone proposing a project or activity that will 'take' a state-listed species to proceed with the plan if there is some greater benefit to the conservation of the species that can be gained in return for the permit.

-Hanni Dinkeloo-

Atlantic Coast Colonial Waterbird Inventory

In 1994, the (then) National Biological Service decided to move forward with a 2-year coastal colonial waterbird survey (officially the Atlantic Coast Colonial Waterbird Inventory. The Massachusetts Division of Fisheries and Wildlife became a party, along with 9 other northeastern coastal states, to a Cooperative Agreement with the United States Fish and Wildlife Service to accomplish the Massachusetts portion of the inventory in 1994 and 1995.

A total of 173 coastal colonial waterbird nesting stations were inventoried for 20 different species. Nesting activity was detected at 136 stations, with a combined total of 57,460 pairs estimated. Three species went undetected. **Herring** and **Great Black-backed Gulls** accounted for 32,661 pairs, or 57% of all pairs. The third and fourth most abundant species were the **Common Tern** (9,845 pairs, 17%) and **Double-crested Cormorant** (7,833 pairs, 14%). The Cormorant population estimate, as well as that for the Great Black-backed Gull (15,078 pairs) and **Least Tern** (2,694 pairs) were all time record numbers. Trace level nesting populations (<10 pairs) were detected for **Leach's Storm-petrel, Little Blue Heron, Cattle Egret, Arctic Tern** and **Black Skimmer**.

-Brad Blodget-

Ram Island Tern Restoration Project

The tern colony at the Division's Ram Island Sanctuary in Mattapoisett experienced explosive growth in 1996. The terns returned in 1993 after a 20 year absence as a result of an intensive 4 year restoration effort by the Division.

While winter and spring storm activity continued the slow erosion of the island that has been going on for many years, the storms also created vegetational changes that were favorable for nesting terns. Areas of goldenrods, particularly favored by the endangered **Roseate Tern**, expanded in extent in 1996. Estimated numbers of roseate terns increased to 719 pairs, more than triple the 197 pairs estimated in 1995. **Common Tern** numbers more than doubled, building to 1100 pairs versus 431 a year earlier. Unfortunately, Tropical Storm Bertha , which swept the state on July 13, dealt a severe blow to the colony. While Common Tern production was nearly completely destroyed, the roseates--which nest slightly higher on the island--fared considerably better. We are indebted to volunteer Richard Harlow and project assistant Michelle Anderson-Hill for their monitoring and banding efforts at the island.

-Brad Blodget-

1996 Statewide Tern Census

Largely on account of the successful restoration of the Ram Island ternery, estimated numbers of **Roseate Terns** increased 18 percent in 1996 to 1,743 pairs compared to 1,480 pairs a year earlier. Gains at Ram Island are believed to be stemming from birds immigrating to Ram Island from roseate nesting colonies at Bird Island in Marion and Great Gull Island in New York. Most of the Roseate Terns in Massachusetts nest in Buzzards Bay where they are split between two major colonies. An estimated 996 pairs nested at Bird Island and 719 at Ram Island in 1996.

Common Terns also showed an increase, with an estimated 11,221 pairs, 9 percent above the 1995 level of 10,323 pairs. **Least Terns**, at 2,673 pairs, were essentially stable compared with 1995. Similarly, there was little change in the **Arctic Tern** situation, with only a trace nesting population of 5 pairs located. Five pairs of **Black Skimmers** were found, the same number as in 1995. **Laughing Gulls** declined 17 percent to 685 pairs, compared to 828 pairs a year earlier.

-Brad Blodget-

1996 Statewide Great Blue Heron Survey

The last status assessment of the **Great Blue Heron** in Massachusetts was completed in 1991 when 46 known or reported heronries were checked and 37 were found active. In 1996, the NHESP conducted a survey to update the 1991 data. More than twice the number of sites than in 1991 were checked (96) and 63 were found to be active, a 70% increase in the number of known active heronries. Accomplishment of the 1996 survey was made possible by input received from the public since 1991 on the locations of new or previously unreported heronries and by the dedicated field work of many volunteers and personnel from the Division and other governmental and nongovernmental organizations.

The Division's Central District (Worcester County) contained the largest number of active sites (27), followed by the Northeast and Western Districts with 16 and 14 respectively. Five were reported from the Connecticut Valley District and 1 from the Southeast District. This marked the first confirmed nesting in the Southeast District--along Cedar Swamp River, Lakeville.

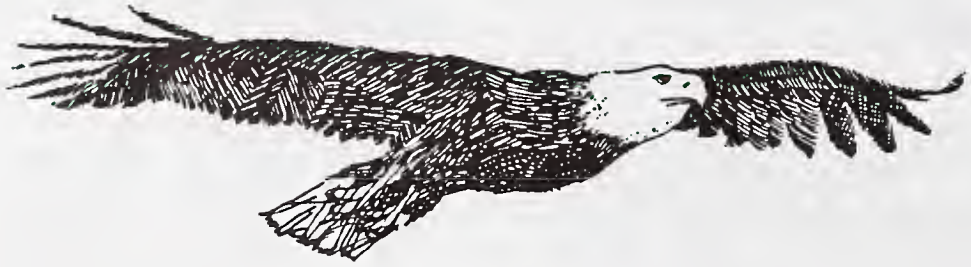
Great Blue Heronry sizes ranged from 1 to 70 pairs, with a mean of 11.37 pairs, up from 10.86 pairs in 1989. Out of the total of 63 heronries located, only 6 contained in excess of 30 nesting platforms: Nipmuck Pond, Mendon (70), Depot Road, Littleton (64), Stop River, Norfolk (61), Dunstable Road, Tyngsboro (49), Witch Brook, Townsend (48), and Moccasin Brook, Phillipston (39). Continuing the pattern seen in previous surveys, the great majority of sites are in beaver flowages, with smaller numbers in other natural wetlands, man-made impoundments, and at upland sites.

The total number of active platforms discovered rose from 402 in 1991 to 716 in 1996, **a 78% increase**. For the first time, the Northeast District edged out the Central District in total number of active platforms with 308 and 285 respectively. The Western District was a distant third (82), followed by the Connecticut Valley and Southeast Districts with 23 and 18 respectively. Total young estimated at 583 nests for which chick counts were available was 1,546, for a mean brood size of 2.65 young/nest. Brood size calculations for 10 previous years (1980-87,-89, and -91) averaged 2.74 young/nest. (R=2.20-3.17).

Although not "listed" as a rare species, the Great Blue Heron is a protected species. The NHESP maintains records on the location of heronries and on trends in the distribution and abundance of this very visible and high interest species.

-Brad Blodget-

1997 Midwinter Bald Eagle Survey



A total of 59 **Bald Eagles** were recorded wintering in Massachusetts during the January 10, 1997 Midwinter Bald Eagle Survey. The Massachusetts survey is coordinated by the Division of Fisheries and Wildlife and is part of a nationwide effort to identify both the number of Bald Eagles wintering in the lower 48 states and the habitat that sustains them.

Quabbin Reservoir was a focal point of the survey where ground teams and a helicopter crew combined to record 32 eagles. The helicopter, provided courtesy of the Massachusetts Electric Company, is invaluable in covering the 100+ miles of shoreline at Quabbin and was also used to census some 15 eagles along the Connecticut River. Other areas where eagles were present included the Merrimack River (4), outer Cape Cod (2), Assawompsett Pond (2), Housatonic River (2), Nantucket (1) and Cheshire Reservoir (1).

The survey has been conducted at the state and national level since 1979. Data gathered have established a positive trend in the number of wintering eagles documented over the years, a sign that the overall population of our national bird is recovering. In Massachusetts, the numbers have risen from 8 eagles in 1979 to a record of 70 in 1993. Last year's survey resulted in 15,476 eagles being counted in the continental United States.

-Bill Davis -

Piping Plover Update

A total of 454 breeding pairs of the federally Threatened **Piping Plover** occurred at 80 sites in Massachusetts in 1996. Although this was the highest count since statewide surveys began in 1985, it represented an increase of only 13 pairs (3%) over the 1995 count of 441 pairs. For the entire state, productivity averaged 1.35 chicks fledged per pair, based on data reported for 441 of 454 pairs (97%) at 76 of 80 sites (95%). This was the lowest productivity since 1988 and was the fourth year in a row that statewide productivity declined. Cooperators reported data on hatching and fledging success for 543 nest attempts. Hatching success was 56% (1,092 of 1,948 eggs hatched) and fledging success was 53% (578 of 1,092 chicks survived to fledge). Abandonment was the most commonly identified cause of nest loss, followed by crow predation, flooding from high tides and heavy

rains, and predation by foxes. Wire predator exclosures were used to protect 293 nests. Nest success (percentage of nests hatching ≥ 1 egg) was 70% for nests within exclosures compared to 49% for nests without exclosures. Suspected but unconfirmed predators of chicks included red foxes, crows, gulls, and black-crowned night-herons. At least 2 chicks were run over and killed by off-road vehicles, and other chicks were believed lost to inclement weather. Monitoring and management activities for Piping Plovers in Massachusetts are carried out by a statewide network of biologists and land managers, coordinated by the Division in cooperation with the U.S. Fish and Wildlife Service.

-Scott Melvin-

Spotted Turtle Monitoring Project

Volunteers are being sought to assist the NHESP in research on the **Spotted Turtle** which is listed as a Species of Special Concern. Volunteers will be provided with the localities of known or suspected Spotted Turtle populations in their area, and will be asked to inventory and monitor their adopted populations over at least one year and preferably several. A protocol will be provided which will focus on field work to determine the location and extent of the habitat used, the size of the population, age structure, sex ratio, evidence of breeding, movements of individuals, and potential threats to the population.

Volunteers will be asked to choose sites near their home or work that can be visited on a regular basis. A permit authorizing the capture and handling of the turtles will be provided. If interested, contact Tom French at (508)792-7270, ext. 163 for more information.

-Tom French-

Surf's Up!

NHESP has launched a colorful World Wide Web page that describes the program and the services we offer. Species lists and other materials are available for download. The next time you're surfing the Internet, pay us a visit at:

http://www.heritage.tnc.org/

nhp/us/ma

The NHESP web page can also be accessed via link from the Massachusetts Division of Fisheries & Wildlife home page at:

http://www.magnet.state.ma.us/ dfwele/dfw.

The NHESP web page is served up on the Natural Heritage Network Central Server with pages from other U.S. Heritage programs and from Conservation Data Centers in the western hemisphere (http://www.heritage.tnc.org). Our thanks go to staff in the MA Dept. of Fisheries, Wildlife & Environmental Law Enforcement, to The Nature Conservancy's Data Visualization Center for their technical assistance, and to the National Biological Service for their sponsorship of the Natural Heritage Network Central Server project.

-Gretchen Eliason-

Land Protection

Fiscal Year 1996: Of the 22 parcels acquired by the Division of Fisheries & Wildlife during the year, five acquisitions were of particular interest to the Natural Heritage & Endangered Species Program. Three projects protected **rich deciduous hardwood forests** in Berkshire County: two acquisitions totaling 192 acres along and near the Green River in **Williamstown** and a 143 acre addition to the Maple Hill property in **West Stockbridge**. In **Newbury**, a 263 acre tract at the confluence of the Parker and Mill Rivers containing excellent **tidal marsh** communities was added onto the William Forward Wildlife Management Area (WMA). A new project in **Dartmouth**, a 133 acre tract (with 20 acres more added in FY97) along the Shingle Island River, protected a variety of wetland habitats that harbor five rare species in what is now called the Noquochoke WMA.

Fiscal Year 1997: Of the agency's twenty-plus acquisitions, the following projects protected important Natural Heritage resources: a 330 acre tract along the Farmington River in **Otis** that protects rare mussels and also includes part of a bog; a key 90 acre parcel of **emergent marsh** important for rare marsh birds that helps connect separate pieces of the Quaboag WMA in **West Brookfield**; 27 acres that complete the protection for a critical **Coastal Plain pond** community in **Plymouth**; and an outstanding **limestone ledge** community with rare plants in **Williamstown**.

-Henry Woolsey-

Tax Form Contributions

The Natural Heritage and Endangered Species Program receives funding from various sources but **33% of our operating budget comes from voluntary contributions tax-filers make on state income tax forms**. The total for 1995 (the last year for which totals are available) was $204,360. from over 33,000 donors. If you donated on your tax form, we thank you. If you didn't and would like to make a contribution, it's not too late! Please send checks payable to: "Natural Heritage & Endangered Species Fund" to the Program. You contributions help make our conservation work possible. Thank you!

-Henry Woolsey-

1997 Summary of the
Massachusetts List of Endangered, Threatened, and Special Concern Species

(as listed in 321 CMR 10.60, November 1996)

Taxonomic Group	Endangered	Threatened	Special Concern	Listed Total	Total Native Species	% of Native Species
MAMMALS (including 6 whales)	7 (7 Federal)	0	5	12	91	13%
BIRDS (breeding, exc. the Eskimo Curlew)	14 (3 Federal)	6 (2 Federal)	11	31	209*	15%
REPTILES (including 5 sea turtles)	8 (4 Federal)	5 (2 Federal)	3	16	30	53%
AMPHIBIANS	0	2	4	6	21	29%
FISH (inland species only)	4 (1 Federal)	2	3	9	39	23%
INVERTEBRATES (non-marine only)	24 (2 Federal)	17 (2 Federal)	58	99	**	**
PLANTS (vascular)	119 (2 Federal)	79 (1 Federal)	53	251	1,650	15%
TOTALS	**176 (19 Federal)**	**111 (7 Federal)**	**137**	**424 (26 Federal)**	**2,040**	**20%**

* Includes only native bird species known to nest in Massachusetts. Does not include migrants.

** The number of native invertebrate species is not known; they are therefore excluded from totals and percentages.

Federal: Species also listed by the U.S. Fish and Wildlife Service as Federally Endangered or Threatened as of Jan. 1997.

In November 1996, the Massachusetts Division of Fisheries and Wildlife delisted three plant species. The three plant species are *Ribes triste* (formerly SC), *Scirpus pendulus* (formerly SC), and *Stachys palustris* (formerly T).

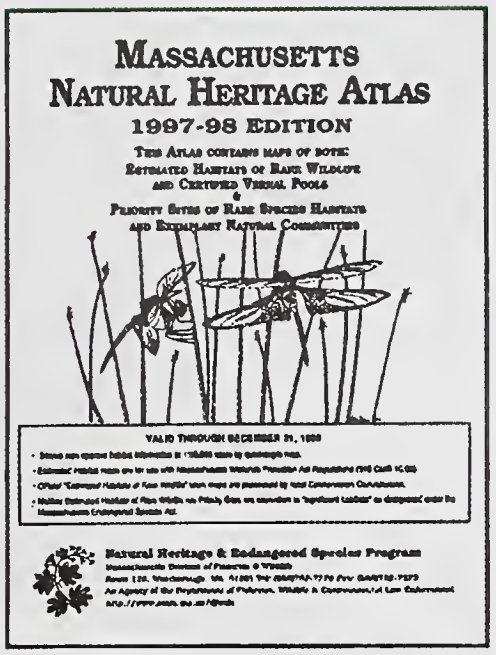
Ribes triste Pallas--In Massachusetts, **Swamp Red Currant** occurs primarily in Berkshire County with one occurrence in Hampshire County, Massachusetts. The species was delisted based on numerous large populations observed during field reconnaissance in this region of the state over the last two decades.

Scirpus pendulus Muhl.--Most records for **Pendulus Bulrush** occur in Berkshire County, but single occurrences exist for Bristol, Essex, Franklin, and Hampshire counties. Large numbers were encountered during a recent project in Berkshire County. The population at the project site was estimated at 98,000 plants and an additional colony of 25-30,000 was also located near the site. The species appears to favor some disturbance and probably is enhanced by human activities that maintain early seral conditions.

Stachys palustris L.--The scientific name for **Woundwort** is currently being applied to a European taxon that has been introduced into North America. Native North American plants are being referred to by plant taxonomists as *S. pilosa* Nutt. All recent Massachusetts specimens are considered to be the introduced species. Specimens of *S. pilosa* exist in herbaria for Hampden, Hampshire, Franklin, and Worcester counties, but they all represent historical records.

-Vicki Frey-

Publications



NOW AVAILABLE.....

The 1997-98 edition of the **Massachusetts Natural Heritage Atlas**, featuring state-wide coverage of two rare species habitat datalayers:

1) *Estimated Habitats of Rare Wildlife and Certified Vernal Pools* (for use with MA Wetlands Protection Act)

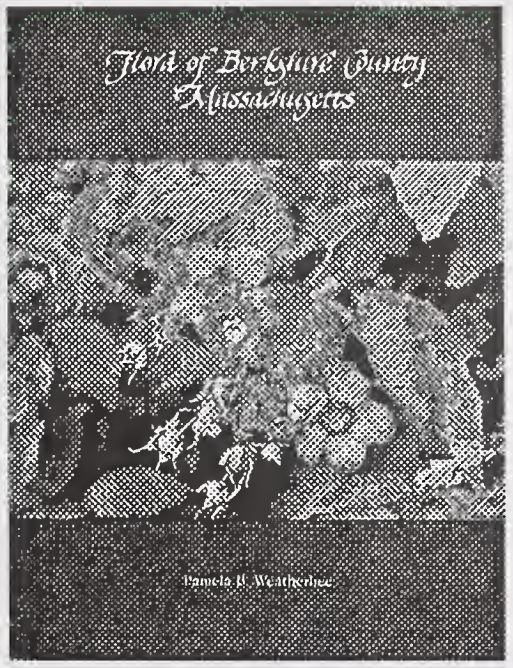
and

2) *Priority Sites of Rare Species Habitat and Exemplary Natural Communities* (for informational use - does not represent Significant Habitat as may be designated under MA Endangered Species Act).

TO ORDER:

Please send a check for $45, payable to the Massachusetts Natural Heritage & Endangered Species Fund, to:

MA Natural Heritage & Endangered Species Program
Division of Fisheries and Wildlife
Route 135
Westborough, MA 01581
ATTN: Atlas



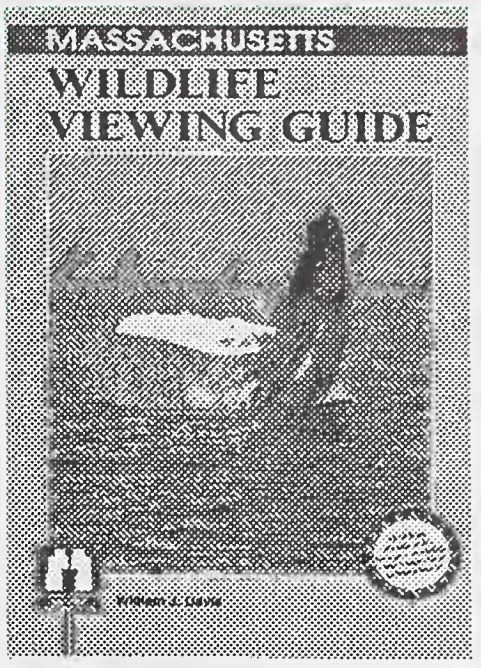
"Flora of Berkshire County, Massachusetts" by Pamela B. Weatherbee.

A complete annotated list of all vascular plant species occurring in Berkshire County, with additional sections discussing factors influencing vegetation: climate, geology, topography, origins of the flora and human impact; and habitats, plant communities, and botanical history. Rare and Endangered species noted. Brief comparisons to previous county flora by R. Hoffmann published in 1922. 48 color photographs of rare species. 3 maps. 134 pp.

TO ORDER: Send $25.00 (includes tax and shipping) to:

The Museum Shop
Attention Cindy Kelly
The Berkshire Museum
39 South Street
Pittsfield, MA 01201
Tel: 413-443-7469

The proceeds from the book are being donated to the NHESP and the Berkshire Museum. ***Many, many thanks go to Pam for her generosity.



"Massachusetts Wildlife Viewing Guide"

.....by our own Eagle Project Leader, Bill Davis. The Guide is a part of the national "Watchable Wildlife" series. It features 67 wildlife viewing areas complete with directions and information on facilities, recreation and species to look for at each site. There are also sections on planning a wildlife viewing trip, safety and ethics, equipment, and where and when to look. The Guide has full color photos of species and habitats by Division photographer Bill Byrne. The introduction and sections on wildlife migrations and biodiversity are illustrated by artist Terri Talas. The Guide can be purchased at bookstores and other local outlets, or send $8.95 to:

MA Wildlife Viewing Guide
Division of Fisheries and Wildlife
Route 135, Westborough, MA 01581.

$1.00 from each book, when bought at bookstores, and the full sale price, when bought from the MA Division of Fisheries & Wildlife, goes to support the agency's wildlife programs.

Staff News

Congratulations to Brad Blodget, State Ornithologist, who was recently named chair of the Roseate Tern Recovery Team. This appointment brings to four the number of NHESP staff who are members of various federal species recovery teams.

Fond Farewell to Henry Barbour, who left us to take the position of Director of Science and Stewardship at The Nature Conservancy's Massachusetts Field Office. Also among those who have left are Joshua Delmonico, Michele Hannon, and Holly Jewkes. Good luck to all.

Welcome - **Andrea Arnold**, Environmental Review Assistant, began in June of 1996. **Jennifer Kearsley,** our new Wetlands Plant Ecologist, joined us in September to work on EPA grants involving floodplain forests, coastal plain ponds, and non-forested peatlands. **Marea Gabriel** takes the place of Henry Barbour as our Habitat Protection Specialist working primarily on land acquisition planning. **Tim Simmons** started as the Restoration Ecologist for the new bond-funded habitat restoration program. **Ann Widem** is now working as the Data Management / Habitat Protection Intern.

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Scott Melvin	Rare Species Zoologist
Tim Simmons	Restoration Ecologist
Paul Somers	Botanist
Pat Swain	Natural Community Ecologist

In addition, thanks to the Massachusetts Field Office of The Nature Conservancy, Julie Lundgren is assisting us with natural community work.

The Program also relies upon interns, volunteers, and work-study assistants for their crucial help. Thanks to Kezia Hearn , Philip Huss, Michael Maloney, Julianne Orsino, Ann Silveri, Rachel Thibault, and Ann Widem.

Massachusetts Natural Heritage & Endangered Species Program
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